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**REMARKS / ARGUMENTS** 

With this Amendment, Claims 15, and 17-30 remain in this application.

Claims 16, and 31-33 are now cancelled. Claims 1-14, and 31-38 were

previously cancelled.

Applicants have cancelled the three claims that had been identified by

Applicants as claims 31, 32 and 33 in paper 4 (July 2002 Response and

Amendment) and paper 6 (November 2002 Supplemental Amendment).

Applicants had inadvertently reused these unavailable claim numbers, and

apologizes for any confusion that this may have caused.

Allowable Subject Matter

Applicants gratefully acknowledge the indication at page 14 of the Office

Action that claims 25, 26, and 30 are free of the prior art, and have amended

them accordingly to overcome the rejections under 35 U.S.C. § 112. These

amendments were made as suggested by the Examiner, and no significant

broadening of these claims has occurred. Thus, Applicants respectfully submit

that claims 25, 26, and 30 are allowable.

Reply to Office Action of April 22, 2003

Claim Rejections Under 35 U.S.C. § 112

Claims 15, 17, 19, 20, and 24-30 have been amended as the Examiner

suggested, in order to overcome the numerous 35 U.S.C. § 112 rejections, as

identified in pages 10-13 of the Office Action.

Applicants would like to thank the Examiner for making these amendment

suggestions.

Claim Rejections Under 35 U.S.C. § 102

Olausson et al '817

Claims 15-18 stand rejected under 35 U.S.C. § 102(e) as being

anticipated by Olausson et al '817. Applicants respectfully submit that claims 15-

18 are not anticipated by Olausson et al '817, as Olausson et al '817 does not

disclose or suggest each feature of the present invention.

The Examiner notes that Olausson et al '817 "discloses a method for

increasing the throughput of a recovery boiler by improving the reaction

conditions within the boiler [see column 2, lines 2-4], the method comprising the

steps of injecting air (which inherently includes oxygen) at least at the secondary

level 8 and the tertiary air level 10."

Olausson et al '817 discloses the use of air that is blown in through certain

ports at a higher pressure than other ports. Olausson et al '817 discloses a novel

way of introducing excess air (i.e. above the stochiometric requirement), but

neither teaches nor suggests the injection of additional oxygen to enrich the

combustion air. In contrast, the present claimed invention is focused with

increasing the net oxygen content of the combustion mix, and thereby increasing

the throughput and efficiency of the recovery boiler, without the associated

increase in the flue gas necessitated by the nitrogen and other non-combustible

components contained in air.

Claim 15 requires a method comprising "injecting oxygen" at various air

injection levels. The terms 'oxygen' and 'air' are understood as having the

ordinary meanings attributed to them. If there is any perceived ambiguity relating

to the meaning that should be attributed to the term 'oxygen', it is clear from the

body of the specification that the intention is to inject a gas that has an oxygen

content that is higher than air into these air injection levels, with the intention to

reduce emissions, increase throughput, increase efficiency, etc. One of ordinary

skill in the art would find that Olausson et al '817 neither teaches nor suggests

the invention of claim 15.

Claim 16 has been cancelled, thereby rendering this objection moot.

Claim 17 and claim 18 both explicitly require that the oxygen content at

the air injection levels be greater than the atmospheric concentration of 21%. In

contrast, Olausson et al '817 only specifies the use of air as an oxidant, and is

therefore believed that the basis for this rejection deserves reconsideration, in

light of this distinction.

Uppstu '895

Claims 15-24 stand rejected under 35 U.S.C. § 102(e) as being

anticipated by Uppstu '895. Applicants respectfully submit that claims 15-24 are

not anticipated by Uppstu '895, as Uppstu '895 does not disclose or suggest

each feature of the present invention.

The Examiner notes that Uppstu '895 "discloses a method for increasing

the throughput of a recovery boiler by intensifying the combustion process within

the boiler [see column 1, lines 13-15], the method comprising the steps of

injecting an oxygen-containing gas (such as air) in somewhat more than

stochiometric amounts [see column 1, lines 30-34] ..."

Uppstu '895 discloses the use of air that is injected through a vertical row

of ports. Uppstu '895 discloses a novel way of introducing excess air (i.e. above

the stochiometric requirement), but neither teaches nor suggests the injection of

additional oxygen to enrich the combustion air. In contrast, the present invention

is concerned with increasing the net oxygen content of the combustion mix,

and thereby increasing the throughput and efficiency of the recovery boiler, without the associated increase in the flue gas necessitated by the nitrogen and

other non-combustible components contained in air.

Claim 15 and claim 20 require a method comprising injecting "oxygen" at various air injection levels. Claim 19 requires a method comprising "applying oxygen enrichment" to various air injection levels. The terms 'oxygen' and 'air' are understood as having the ordinary meanings attributed to them. If there is any perceived ambiguity relating to the meaning that should be attributed to the term 'oxygen', it is clear from the body of the specification that the intention is to inject a gas that has an **oxygen** content that is *higher than air* into these air injection levels, with the intention to reduce emissions, increase throughput, increase efficiency, etc.. One of ordinary skill in the art would find that Uppstu '895 neither teaches nor suggest the invention disclosed in either claims 15, 19, or 20.

Claim 16 has been cancelled, thereby rendering this objection moot.

Claims 17, 18, and 21-24 all explicitly require that the oxygen content at the air injection levels be greater than the atmospheric concentration of 21%. In contrast, Uppstu '895 only specifies the use of "an oxygen-containing gas", which is defined as being either "air, odorous gases, or flue gas" (column 1, lines 11 through 13) air as an oxidant, and is therefore believed that the basis for this rejection deserves reconsideration.

Appl. No. 10/016,067 Amendment date August 22, 2003

Reply to Office Action of April 22, 2003

Leffler et al '950

Claims 27-29 stand rejected under 35 U.S.C. § 102(b) as being

anticipated by Leffler et al '950. Applicants respectfully submit that claims 27-29

are not anticipated by Leffler et al '950, as Leffler et al '950 does not disclose or

suggest each feature of the present invention.

The Examiner notes that Leffler et al '950 "discloses a method for

improving combustion stability and efficiency, the method comprising the steps of

supplying air flows (which inherently include oxygen) to the various air injection

levels, including the primary air injection level 20 and the secondary air injection

level 24, sensing the sulfur dioxide concentration in the flue gas or exhaust 32 via

sensor 34, and adjusting the air (and oxygen) flow to the respective air injection

levels 20 and 24 in order to minimize the sulfur dioxide emissions."

Leffler et al '950 neither teaches nor suggests the injection of additional

oxygen to modulate the amount of undesirable combustion products.

Claims 27 and 28 of the present invention require a method comprising

supplying "oxygen flows" at various air injection levels. Claim 29 is dependent on

claim 28, and further requires that the "oxygen enrichment concentration" be

controlled independently for each air injection level. The terms 'oxygen' and 'air'

are understood as having the ordinary meanings attributed to them. If there is

any perceived ambiguity relating to the meaning that should be attributed to the term 'oxygen', it is clear from the body of the specification that the intention is to inject a gas that has an **oxygen** content that is *higher than air* into these air injection levels, with the intention to reduce emissions, increase throughput, increase efficiency, etc. One of ordinary skill in the art would find that Leffler et al '950 neither teaches nor suggest the invention of claims 27 through 29.

#### **CONCLUSION**

In view of the current amendments, the present application now stands in condition for allowance. Early notice to this effect is earnestly solicited.

Should the Examiner believe that a telephone call would expedite prosecution of the application, he is invited to call the undersigned attorney at the number listed below.

Respectfully submitted,

Linda K/Russell

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Stacy Forte